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# Dairy Tech, Inc.

## *Service Manual: DT10G, DT30G &DT60G*

# Dairy Tech, Inc.

## *Service Manual: DT10G, DT30G &DT60G*



### *CE Declaration of Conformity*



#### **Industrial Milk Pasteurizer**

**DT30W:** ~ 120 V, 1 ph, PE, 50/60 Hz, up to 10 A  
(~240 V, 2 ph, PE, 50/60 Hz, up to 50 A heater circuit)  
**DT10G/10GEU:** ~200-240 V, 1 phase, PE, 50/60 Hz, up to 15 A total  
**DT30W-EU:** ~240 V, 1 ph, PE, 50/60 Hz, up to 10 A  
(~240 V, 1 ph, PE, 50/60 Hz, up to 30 A heater circuit)

<b>Year of Issue:</b>	<b>2012</b>
<b>Applicable Directives:</b>	<ul style="list-style-type: none"><li>• 2006/95/EC - Low Voltage Directive - Laws for electrical equipment within certain voltage limits</li><li>• 89/336/EEC - EMC Directive - Laws relating to electromagnetic compatibility</li></ul>
<b>Applicable Standards:</b>	<ul style="list-style-type: none"><li>• EN 61010-1: 1998 Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements</li><li>• EN 55011: 1998 Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment. (Group 2, Class A)</li><li>• EN 61000-6-2: 1999 Electromagnetic Compatibility – Generic Standards – Immunity for Industrial Environments</li></ul>

#### **NOTE:**

1. This equipment must be installed and used in accordance with the conditions of use described in the user manual.
2. If this equipment is modified without the permission or direction of Dairy Tech, this declaration is no longer valid.
3. EMC compliance is only for that equipment listed above. If this equipment is expanded, modified or installed into a larger system, the user is responsible to guarantee the EMC compliance of the overall system. If this equipment is used with external components, the user must insure that EMC and safety requirements are not violated.
4. All equipment is HiPot and Ground-bond tested prior to final packaging.

**Declared Model Numbers:**      **DT30W (30 gallon Internal Heater) DT10G (10 gallon)**  
                                        **DT 30W-EU (30 gallon Internal Heater)**

Testing performed by :      Aldous Consulting  
                                        2845 Willow Tree Ln  
                                        Lab: 1625 Sharp Point Dr  
                                        Fort Collins, CO 80525  
                                        Scott Aldous - Proprietor

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### **Introduction**

Thank you for purchasing a Dairy Tech, Inc. DT Platinum Series Pasteurizer. Your satisfaction with this product is very important to us. This guide will help you understand how your pasteurizer operates, and how to get the most benefit from it for you and your dairy operation.

### **Disclaimers**

**THIS PASTEURIZER IS INTENDED TO BE USED IN THE MANNER DESCRIBED IN THIS USE AND CARE GUIDE. IT IS NOT INTENDED TO PASTEURIZE MILK OR OTHER GOODS FOR HUMAN CONSUMPTION.**

Dairy Tech, Inc. has provided this use and care guide to assist you in the assembly, installation, and maintenance of your DT Platinum Series Batch Pasteurizer (the "Pasteurizer"). Serious injury and even death to persons and livestock can occur from improper installation and use of the Pasteurizer. Serious property damage can result from improper installation and use of the Pasteurizer. We recommend professional installation by qualified plumbers and electricians familiar with such devices

DAIRY TECH, INC. RECOMMENDS THAT INSTALLATION OF ANY ELECTRICAL, MECHANICAL, GAS OR PLUMBING DEVICES REQUIRED FOR THE INSTALLATION, OPERATION AND MAINTENANCE OF THE DAIRY TECH PASTEURIZERS BE DONE ONLY BY QUALIFIED INDIVIDUALS.

It is your responsibility or the responsibility of the electrician, plumber or other qualified installation expert to obtain all necessary permits and certifications required by your town, county, state or other jurisdiction before installation of the Pasteurizer. It is your responsibility to read and understand the operational requirements of the pasteurizer before using it and to observe all safety precautions. It is also your responsibility to see that your personnel are properly trained to operate and maintain the Pasteurizer.

DAIRY TECH, INC. PROVIDES YOU WITH INSTRUCTIONS AND WARNINGS IN THIS USE AND CARE GUIDE, BUT WE ARE UNABLE TO COVER ALL POSSIBLE CONDITIONS AND SITUATIONS THAT MAY OCCUR IN YOUR DAIRY OPERATION. IT MUST BE UNDERSTOOD THAT COMMON SENSE, CAUTION AND CAREFULNESS ARE FACTORS WHICH CANNOT BE BUILT INTO THE PASTEURIZER. THESE FACTORS MUST BE SUPPLIED BY THE PERSON(S) INSTALLING, MAINTAINING OR OPERATING THE PASTEURIZER.

Under no circumstances is Dairy Tech, Inc., its directors, officers, shareholders or employees responsible for damage to

property or injury to persons or livestock resulting from the improper installation or use of the Pasteurizer. Installation by an unqualified individual and improper use and improper maintenance may also void any equipment warranty that Dairy Tech, Inc. offers.

This use and care guide is based on information and data considered to be accurate; however, no warranty is expressed or implied regarding the accuracy of the information or data herein or the results to be obtained from the use of this data or information.

**Please read this guide carefully and thoroughly before installing and operating the pasteurizer.**

If you believe the pasteurizer is operating incorrectly, please refer to the trouble shooting guide included with these instructions before calling our service department. If you still have questions, contact your local representative or call 1-866-384-2697 and we will help you to address your needs.



Caution: Important Information



Warning: Hot Surface

**For your safety, the recommendations and information in the manual must be followed to minimize the risk of serious burns or electrocution, as well as to prevent property damage, personal injury or death.**

**If you are burned by the heating coil, hot water, steam or hot milk:** Contact a physician or other medical personnel for expert advice, or go to an emergency treatment facility.

Do not feed pasteurized milk to calves without first cooling it back down so that it is no hotter than 110°F (43°C). Milk hotter than 110° can cause severe burns to the calves.

### **Did you know?**

Dairy Tech, Inc. offers consultations with an independent Dairy Veterinarian at any time. If you have questions regarding calf health issues or other veterinary related topics, we would be glad to organize a conference call for you to discuss these. On site visits are also available to more thoroughly investigate any problems you may be encountering with calf health.

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### **Product Warranty**

This product is warranted to be free of manufacturing defects. For up to 12 months from the date of purchase, all parts will be covered by a free replacement guarantee not including shipping or service. This warranty is intended for equipment in use under normal operating conditions and does not cover damages incurred by improper use or unforeseen acts of nature. Determination of covered defects, damages or repairs is at the discretion of Dairy Tech, Inc. This warranty covers only the cost of replacement parts at Dairy Tech, Inc. current pricing. Service is not covered by this warranty. Parts replaced under warranty must be returned to Dairy Tech at 34824 CR 29, Greeley, CO 80631. Parts not returned will be charged to customer at retail pricing.

### **Product Registration**

If this product was purchased directly from Dairy Tech in Windsor, CO, it has already been registered and no further action is required. If the product was purchased by a distributor or other representative, please call Dairy Tech, Inc. at 866-384-2697 within 10 days to register the product. Failure to do so may result in a decreased or voided warranty period for your unit. When calling, please have the serial number which can be found on the back side of the control housing or back panel.

You may also register on-line at [www.dairytechinc.com](http://www.dairytechinc.com) where you can "Contact Us", fill in your information and in the notes type the product model and serial number and the word "register".

### **Important Safety Instructions**

#### **Warning:**

To reduce the risk of electric shock, burns, serious injury or death to persons when using the Pasteurizer, follow these basic precautions:

1. Read all instructions before using the Pasteurizer.
2. Do not turn on the pasteurizer without first filling with water around the heating elements as directed on page 12.
3. Always disconnect the electrical power before attempting service. All power sources must be disconnected before the cover is removed for repair.
4. Do not allow children to operate or play around the Pasteurizer. Close observation of children is necessary when the unit is used with children nearby.

5. Do not reach into the Pasteurizer when the power is on and the paddle is turning as this can cause serious harm.
6. Hot Surfaces include the lid, plumbing fixtures, electrical fixtures, hoses, heater body, milk cabinet surfaces, draining water and the milk or colostrum. Touching these surfaces during operation may result in severe burns.
7. This equipment is designed to operate in an ambient temperature range of 35°F (2°C) – 100°F (38°C), altitude up to 2000m, maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% RH at 40°C, for indoor use only.
8. Do not try to change the settings in the pasteurizer controller without consulting a technical expert at Dairy Tech, Inc.
9. Do not repair or replace any part of the Pasteurizer, or attempt any servicing unless specifically recommended in the trouble-shooting portion of this manual. Any modifications made to the unit beyond these instructions will void all warranties.
10. Always clean the unit immediately after each use, according to the instructions in the "Cleaning of your Pasteurizer" section of this manual. Build up of residue on the propeller or tank will decrease heating and cooling efficiency, as well as harbor potentially harmful pathogens.
11. During the heating cycle, always make certain the Pasteurizer lid is firmly seated on the pot of milk. The lid will be hot. Do not touch while in operation.
12. Use the pasteurizer only for its intended purpose. DO NOT use for milk intended for human consumption as this product has not been approved for such use.
13. Do not touch the tank of milk, motor, hoses, lid, handle or brass fittings while the unit is hot and working.
14. Do not attempt to tilt the machine while it is full. It is extremely heavy and can cause severe injury to the operator and may cause failure of the support structures.
15. To prevent severe burns, always allow the milk or colostrum to cool completely before handling or feeding to calves.
16. The Pasteurizer must be electrically grounded. DO NOT modify the plug that is provided with the Pasteurizer; if it will not fit the outlet, have an electrician install a proper electrical outlet.
17. The pasteurizer must be installed on a level surface to evenly distribute weight to all the support structures.

### **Receiving your pasteurizer**

Use care when unpacking your DT Platinum Series pasteurizer. It will have arrived in one box or crate. Please make a note of any cautionary labels that are used on the carton suggesting orientation, where to cut with a knife, fragile, etc. For DT10G Models, save the bottom half of the powder coated shipping container for use as a pasteurizer stand

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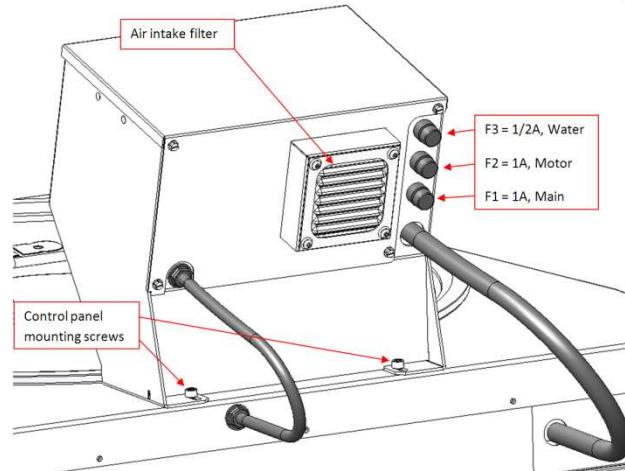
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### *Installation: Preparing the Machine*

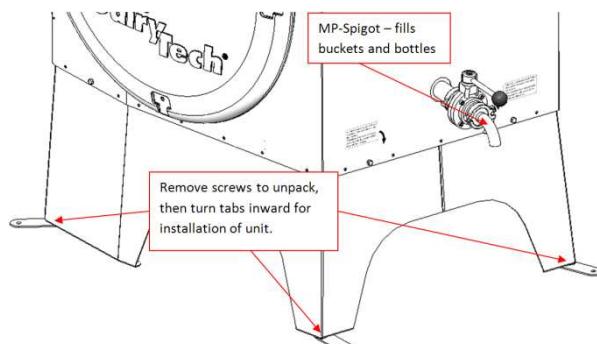


#### **Warning:**

Install the unit according to the installation instructions. To reduce the risk of fire, electric shock, serious injury or death to persons, read the important safety instructions before operating this Pasteurizer. Before using this unit for the first time, wash out the inside of the drum with hot soapy water and rinse clean.



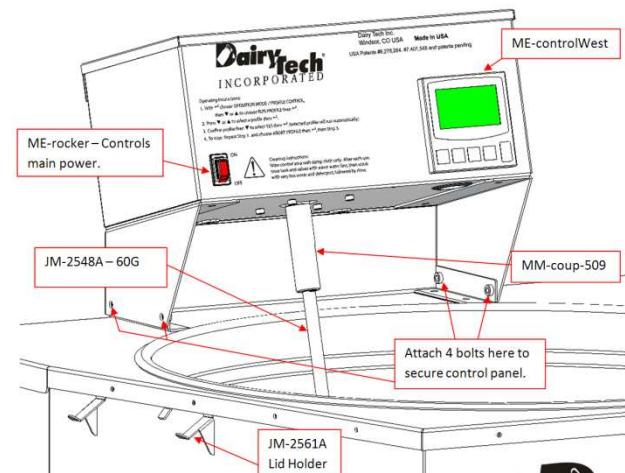
### *Unpacking the DT60G*



### *Mounting the Control Panel*

The pasteurizing unit is typically shipped with the control box detached and packed in the tank of the unit. Mounting of the control box will be required. Gently remove the controller from the milk pot. Four mounting holes are provided on the top surface of the unit. Using the bolts that are provided, attach the control unit in an upright fashion to the top lid of the pasteurizer. The screw slots may allow some adjustment of the propeller and shaft if required later. The electrical connections are already made. Use care to not stretch these connections. See the next figure for the DT10G and DT30G.

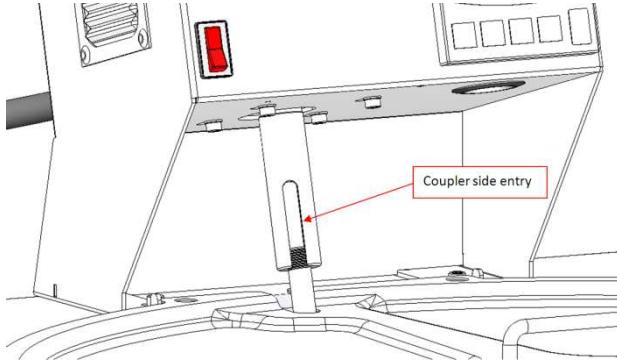
Here is another image shown below of the DT60G which has side mounting screws to secure the control box to the top of the cabinet.



The motor shaft must also be attached by inserting it through the side entry of the coupler, followed by right-hand threading of the shaft into the coupler. The shaft can be gripped at the knurling located midway on the shaft. Only finger tighten as shown in the next image.

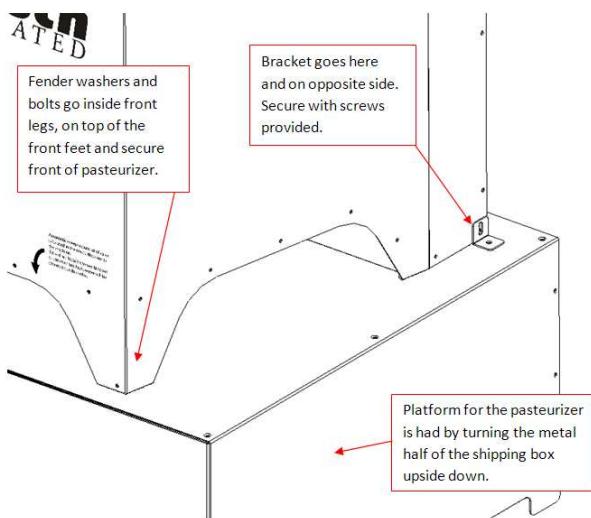
Dairy Tech recommends that the stirring shaft be removed from the coupler any time the pasteurizer is being moved. This will help to avoid a bend in the shaft. A bent shaft can result in premature failure of the drive motor. Treat the shaft with due care any time it is not in the machine.

# T60G



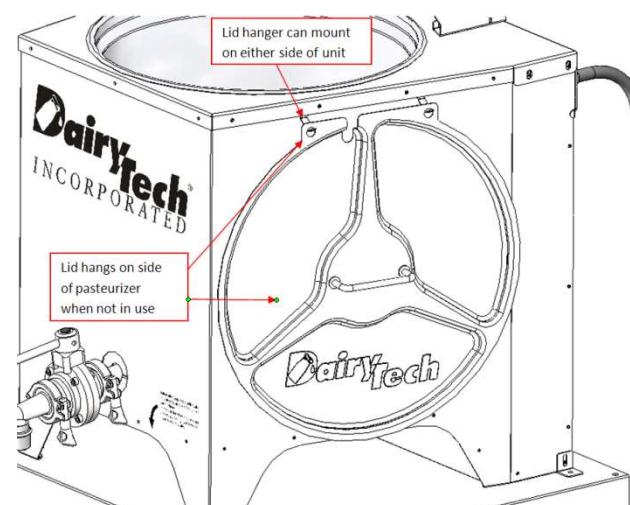
## ***Mounting the DT10G onto the Base***

The DT30G and DT60G each come with a fully assembled leg stand to support the machines. The DT10G is shipped to you in specially designed box that is half metal and half cardboard. You can discard the top cardboard half after removing straps and carefully lifting off of the machine. With an assistant, carefully lift the pasteurizer out of the metal powder coated box and set the DT10G to the side. Turn the white box over and move it to the location where you wish to install the machine. Lift the pasteurizer and place it on the box so that the sides and front line up with the mounting holes. You will find two mounting brackets and hardware which you can use to secure the DT10G cabinet to the support box. Refer to the illustration below.



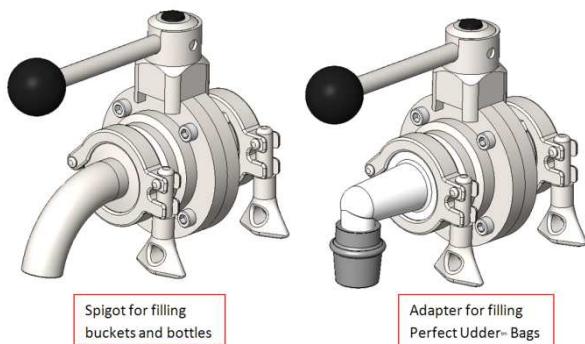
## ***Lid Storage***

The lid is packaged with the unit and can be hung on either side of the pasteurizer by the 2 holes at the top of the tab. This provides a convenient place to store the lid while the unit is being cleaned or filled. See below for proper lid storage.



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### Connecting the Milk Spigot

The Platinum Units come supplied with the highest quality 304SS butterfly drain valve. These are installed on the front flange of the tank drain much the same as connections are made to a bulk tank flange using the clamps provided. Please see the diagram below. Make certain to include the gasket between each fitting. These parts can then be easily removed for thorough cleaning in a sink. See next image.

### Choosing and Preparing a Location

#### **Criteria for Selecting a Location**

- a) Choose an indoor spot that will be protected from the elements. Extreme heat will allow milk spoilage and freezing temperatures will damage the unit.
- b) Cold water is required to be connected to the unit for water cooling the milk or colostrum, and a nearby hot water source is necessary for proper cleaning.
- c) Floor drains will allow for proper cleaning and rinsing of the product as well as to clean up milk spills.
- d) Power requirements are 240vac 30 or 50 amp circuit breaker rated for use as branch circuit protection. DT10G & 30G-EU models for European installations that require 240vac single phase or 480vac 3 Phase connections contain an internal step-down transformer to provide 120vac for control power in models where necessary.
- e) Floor space requirements are approx 1 yd<sup>2</sup> (1M<sup>2</sup>)
- f) Avoiding extremely drafty areas will improve heating efficiency of the unit.
- g) Always have 2 people lift and carry the unit grasping with both hands on the sides of the unit. The supports of the legs can be used for lifting. Never attempt to move the unit while it is full of milk or water.

### **Connecting the Hoses for Water-Cooling**

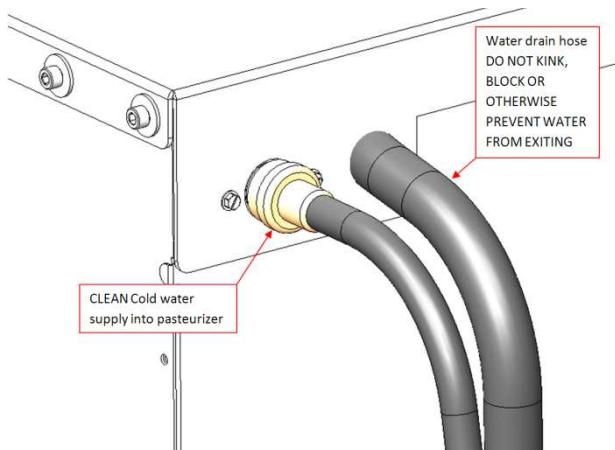
**WATER-Cooled Units:** A 6' black supply hose is supplied with the machine. This hose with factory ends supplies all the cold water to cool the product when pasteurization is finished. It can connect to any normal domestic pressure cold water source including a hose but it **MUST BE ON AT ALL TIMES DURING OPERATION**. Using the supplied hose, attach one end where indicated on the back of the unit, with the other end going to a regular hose bib supply. Pressure reduction is provided by the orifice of the solenoid valve. A relief valve is incorporated into the design of the DT30G and DT10G with a port coming out of the bottom of the unit toward the right rear. The DT60G Model contains dual pressure ports. Should the drain line be raised too high or blocked, pressure will relieve itself by opening this valve which will spill water onto the floor. This protects the metal milk tanks from implosion in high pressure situations. Take care to avoid situations where any back pressure exists on the drain line. This will void the warranty.

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**WATER DRAIN:** This 4' black hose is connected internally and takes cold water out of the unit once it has absorbed heat during the cooling cycle. It should be directed to a drain, cistern, stock tank or other collection system. **Do not connect the hose to another hose or to any system that can create back-pressure. This will cause damage to the cooling jacket and void the warranty.** If you wish to salvage the waste water, direct the drain line to a 5 gallon bucket and place an inexpensive sump pump in that bucket to send water where it needs to go. This prevents any back pressure to the unit.

It is important to keep water turned on anytime the pasteurizer is in operation to prevent damage to the heating elements.



### Electrical Requirements

The standard electrical cord emerging from the back of the machine should be plugged directly into a 240vac grounded receptacle on a 30amp breaker for DT10G Models, a 30amp breaker for DT30G Models and a 50amp breaker for DT60G Models. Take special note of the electrical label on the back of the machine to be sure. Failure to meet these requirements will void the warranty and could result in serious damage to the unit, bodily injury or death. The receptacle should be fitted with a water resistant cover for added protection. **ALL CONNECTIONS SHOULD BE PERFORMED BY AN ELECTRICIAN OR OTHER TRAINED PERSONNEL.**

- The receptacle should be sharing minimal usage with other equipment to avoid unexpected outages and tripping of the breaker. If the power is lost, but returns within 1 hour, the cycle will resume automatically in most instances.
- DT10G units at full power are rated at 15 amps at 230vac. Do not install on circuit breakers greater than 30 amps.

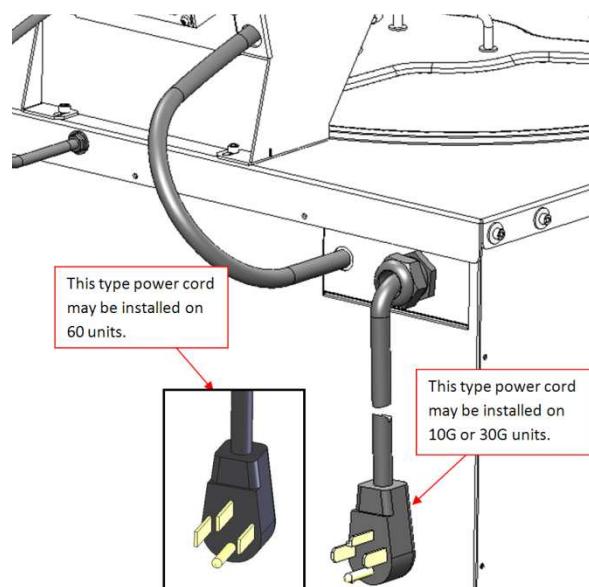
- DT30G units at full power are rated at 18 amps at 230vac. Do not install on a circuit breaker greater than 30 amps.
- DT60G units at full power are rated at 35 amps at 230vac. Do not install on circuit breaker greater than 50 amps.
- European Installations must be done with a switch or circuit breaker disconnect within reach of the equipment for power down, which should be labeled as such.
- DO NOT use an extension cord to operate the unit other than the one provided.
- Check your electrical system to make certain it is properly grounded to avoid the possibility of electrical shock.

See next image for location of the power cord if one was supplied with your equipment.

### International Installations for 10, 30 & 60G

International installations are equipped with a built-in step-down transformer when necessary. For machines designed prior to March 2012, there may be components that require a 120vac supply for control function.

Some International models are not supplied with power cords per local electrical ordinances. Follow the labels attached to the back of the machine for specific wiring instructions in these instances.



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The Pasteurizer is equipped with a cord having an equipment grounding conductor and a grounding plug. **BEFORE INSERTING THE PLUG, MAKE CERTAIN THAT THE ROCKER SWITCH IS SET TO "OFF" OR THE PUSH BUTTON SWITCH IS IN THE POPPED OUT POSITION.** The plug must be inserted into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances. DO NOT modify the plug provided with the Pasteurizer; if it will not fit the receptacle, have a proper outlet or new plug end installed by a qualified electrician.



**DO NOT TURN THE PASTEURIZER ON UNTIL YOU ARE TOLD TO DO SO.  
FAILURE TO FOLLOW THIS  
INSTRUCTION MAY DAMAGE THE  
UNIT AND VOID THE WARRANTY.**



### WARNING: Component Ratings

West Control: 120-240vac, 1amp, 1P, 50-60Hz

YN80 Gear Motor: 156RPM, 120vac, 1P, 1amp, 60Hz  
YN80 Direct Drive motors: 225RPM, 240vac, 1P, 1amp, 50-60Hz

Heater **DT10G:** L10A8-1E24, 1500watt, 240vac, 1P/3P, 14 amp, 50-60Hz

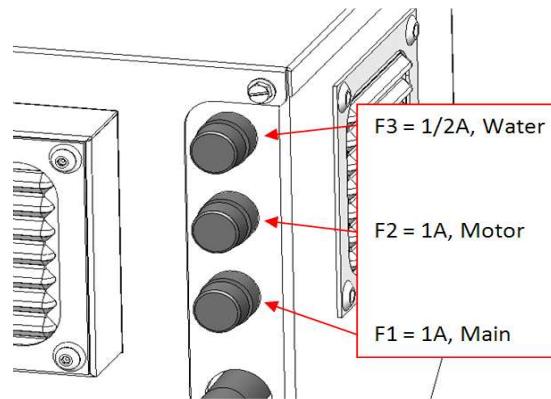
Heater **DT30G:** N14A20-1E24, 2000watt, 240vac, 18amp, 1P/3P, 50-60Hz

Heater **DT60G:** N24-A23, 3900watt, 240vac, 34amp, 1P/3P, 50-60Hz

Cooling Fan: 670-OA825AP111WB, 120vac, 1P, .5amp, 50-60Hz

### External Fuse Board

The unit is equipped with 3 external fuses on the back of the unit. These fuses protect delicate electronics and also serve as a troubleshooting guide in cases of system malfunction. The layout of the fuses is shown below, as well as on the unit itself. Refer to Trouble Shooting for further information.



Platinum Models use  $\frac{1}{4}$  x  $1\frac{1}{4}$  fuses

F3 Main power supply  
Fast-Acting 1A 250vac

F2 Motor  
Fast-Acting 1A 250vac

F1 Cold water valve  
Fast-Acting 1/2A 250vac



### **AT FIRST USE OF THE MACHINE.**

The system must be charged with water to prevent damage to the heating elements. Once the installation is completed, place a couple of gallons of very hot water into the milk tank. Then follow the steps below for using the pasteurizer but **CHOOSE THE COLOSTRUM COOL ONLY PROFILE FOR THE FIRST USE OF THE MACHINE.** This will call for cooling water to fill the tank of the machine. It may take several minutes for the tank to fill with water. Once water is flowing freely from the discharge line, this profile can be aborted as described below. This step will not be necessary in future uses unless the tank is drained.

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### ***Filling and Emptying the Milk Drum***

While some dairies may elect to have the milk line pump directly into the pasteurizer, most dairies will be dealing with volumes that can be dumped into the unit from milk cans or collection buckets. Try to avoid unnecessary splashing and provide a sturdy step for short employees who may have trouble comfortably dumping milk into the unit.

To remove the milk: Open the spigot to fill buckets, bottles or storage bags. DO NOT TILT THE EQUIPMENT TO GET MILK OUT! This may cause undue stress on the support system and could potentially damage the unit or harm the operator. Any residual milk or colostrum can easily be wiped or brushed from the unit

### ***Energy and Time Saving Tips***

- Pasteurize the milk as quickly as possible after collection to take advantage of the heat already in the milk to improve energy efficiency. This will also prevent the immediate heavy growth of bacteria in this fresh product.
- Avoid placing the unit in an area of high drafts to prevent convection heat losses while pasteurizing.
- Colostrum can be stored in the refrigerator for an extended period of time if it is handled cleanly once it has been pasteurized. Filling Perfect Udder™ Colostrum management bags allows for a disposable system that makes it easy to keep track of dates and colostrum quality. These bags also allow the product to be warmed more quickly when they are needed for the newborn and can then be fed without recontamination of the product. These can be ordered at [www.calfology.com](http://www.calfology.com) or at [www.dairytechinc.com](http://www.dairytechinc.com).
- Do not dip bottles into the tank for filling as this will likely contaminate the product with bacteria from the bottom and sides of the bottles.
- Always wear nitrile or latex gloves when handling the milk or colostrum to prevent the spread of pathogens from the skin surface.

### ***CLEANING THE SYSTEM***

***(Be sure the equipment is powered OFF)***

- With the stir motor stopped, raise the lid from the milk pot and place it on the hook on either side of the unit after thorough cleaning in a sink.
- Clean the following milk surfaces with hot water and an appropriate disinfectant. Go over all the exposed surface areas with the included scrub brushes and appropriate disinfectants. A mild abrasive pad may be used to remove any residue on the following components:
  - Motor shaft, coupler and propeller (shaft can be unthreaded for cleaning by grasping the coupler with the slot facing forward and unthread the shaft by grasping the knurling mid shaft for a better grip.)
  - Thermocouple well at bottom of pot
  - Underside of the pasteurizer lid
  - Milk tank and drain spigot/value
  - accessory spigots, pitchers or hoses
- Stubborn residues may be cleaned with a scour sponge if necessary. Avoid the overuse of acids as they may corrode some of the brass or aluminum parts on the equipment. Follow manufacturers handling recommendations for all chemicals.

### ***When Service is Required***

If you purchased the Pasteurizer from an authorized dealer, contact them directly with inquiries or repair questions. For prompt service, work through the troubleshooting guide in this manual to give an accurate description of the problem.

Repair by an unauthorized service technician will void the warranty.

[www.dairytechinc.com](http://www.dairytechinc.com)

**Warning:**

The aluminum and stainless steel drums and lids can cause severe burns if handled before the product is completely cooled. Always finish the cooling cycle before handling the milk. Grasp the lid by the handles and do not handle the milk or colostrum unless it has cooled.



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### **Using the Pasteurizer**

Initial cleaning of the milk pot may be necessary to remove oil residues from the manufacturing process. Next, simply add milk or colostrum and replace the lid. You are now ready to choose one of the operational options listed below.

Try to avoid excessive splashing or spilling of the product as it is being poured into the unit. Clean spills with a damp cloth as quickly as possible.

Do not overfill the pot as the milk will splash out from under the lid while being stirred.



### **Running the Cycles**

- Power the unit on by toggling the red rocker switch or push in the red button switch; the display should run through some diagnostics, display a red Dairy Tech Inc logo and then be ready for use once back to a green color.
- The Dairy Tech ProVu control system is designed with multiple menus to choose from. Custom menus are available if there are specific needs of a dairy. Use the return arrow key to the right (→) to choose the operational mode screen with the options to Run, Abort, etc.
- Using the down arrow ↓, select Run Profile and then press the return arrow key ↩.
- Using the down arrow ↓, select a profile that you wish to run then press the return arrow key ↩. **FOR THE FIRST USE OF THE MACHINE, SELECT THE COLOSTRUM COOL ONLY PROFILE. FOLLOW OTHER INSTRUCTIONS ON PREVIOUS PAGE.**

➤ You will be asked if you are sure. Select YES and then press the return arrow ↩ key once again. The cycle should automatically start at this time and no further action is required until the cycle is finished.

➤ If you need to stop a cycle, turn off the toggle switch or disconnect the power in an emergency situation; otherwise, repeat the steps above and select ABORT the profile, then YES to confirm the action.

➤ The following menu options are available on all DT10G, DT30G and DT60G models.

- Colostrum Normal Profile
- Colostrum Heat Only
- Colostrum Reheat Profile
- Colostrum Cool Only
- Milk 145
- Milk 161

➤ Colostrum Normal is chosen for pasteurizing to 140F for 60 minutes with cool down to 90F.

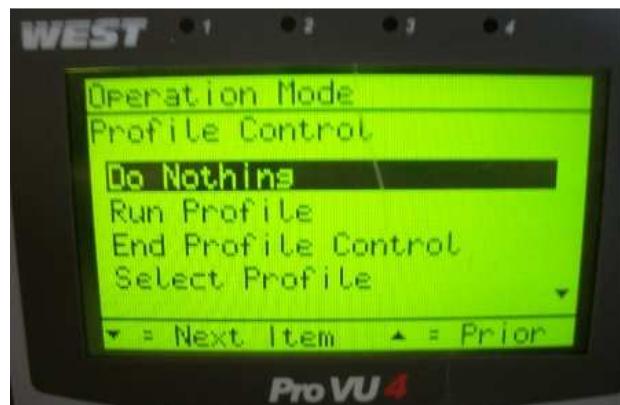
➤ Colostrum Heat Only is used to pasteurize to 140 for 60 minutes without cooling.

➤ Colostrum Reheat is used to warm milk or colostrum back to feeding temperatures if it has been cooled after pasteurization.

➤ Colostrum Cool is to cool down milk or colostrum that was previously pasteurized, or to fill the tank with water on initial use.

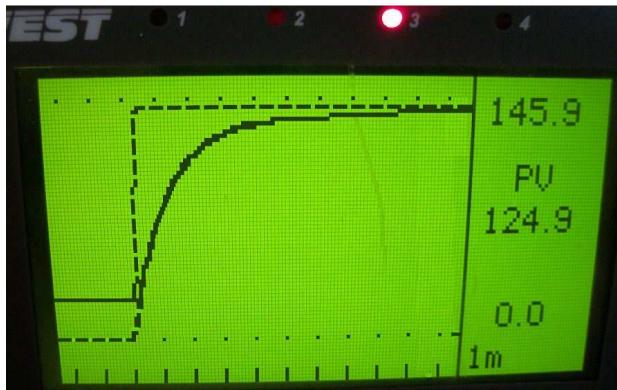
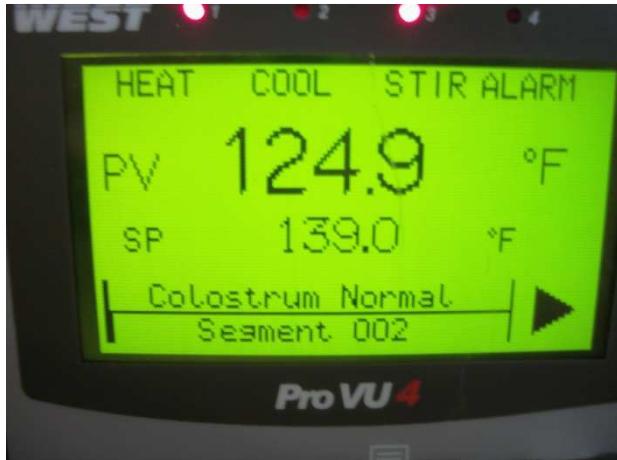
➤ Milk 145 is used to pasteurize milk only batches at 145F for 30 minutes then cooling back to 90F

➤ Milk 161 is used to pasteurize milk only to 161F for 30 seconds and then cooling back to 90F



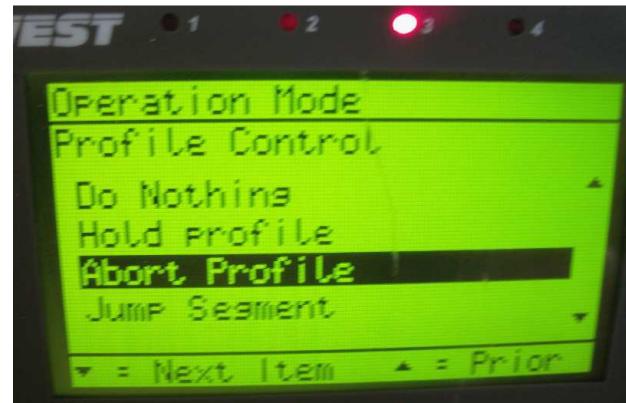
# Dairy Tech, Inc.

## *Service Manual: DT10G, DT30G &DT60G*



### ***Understanding the Graph***

Dashed Line – the setpoint curve for the process  
Solid Line – process value temperature of the actual process  
Bottom Hashes - sample time interval  
Middle Number is the process Value ... the temperature of the milk and is the only important number on this graph



The Dairy Tech ProVu controller has several display screens that can be accessed during normal operation by using the left arrow  $\leftarrow$  and the return arrows  $\downarrow$  to scroll. You will be able to see control values to view temperatures, see power functions of the machine as it proceeds through steps, and view a live graph to show temperatures recorded during the process. Data sets of the recorded temperatures can also be downloaded through the USB port and exported to an Excel spreadsheet for tracking.

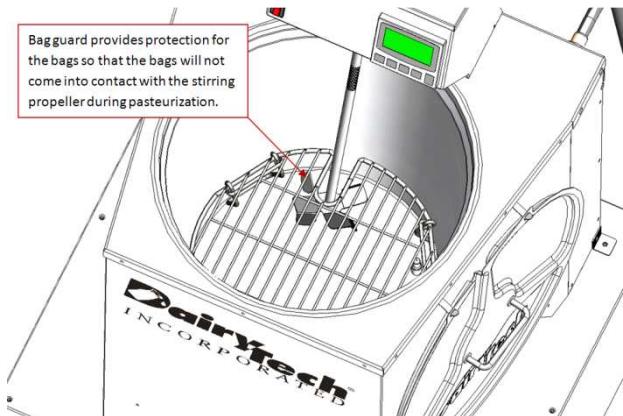
### ***Control Values***

PV= Process Variable or temperature of the milk/colostrum  
SP= Setpoint that the process is trending toward  
%SPW/PPW= memory remaining or power of outputs  
LED red lights in top indicate outputs for heating, cooling and stirring of the product.  
Main Numbers are the temperatures displayed in F or C.

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### Installation and Use of a Bag Guard



### Quality Control and System Monitoring

The following recommendations should be carried out when the system is first installed and then on a monthly schedule to make certain that the pasteurization process is working adequately.

1. Follow all instructions for proper installation by thoroughly reading the manual.
2. Use quality milk and colostrum in the machine. The process can be overwhelmed if there are too many bacteria to begin with.
3. Handle the milk cleanly after pasteurization to prevent recontamination.
4. Utilize the Dairy Tech Milk Test Kit to send a sample to the independent lab for milk quality testing.
5. Verify display temperatures periodically with a second thermometer to be sure that the displayed reading matches closely with a trusted calibrated source.
6. Additional milk test kits are available for order at [www.dairytechinc.com](http://www.dairytechinc.com)

### Time & Temp for proper pasteurization:

Milk 145°F(63°C)/30 minutes or 161°F(72°C)/30 seconds  
Colostrum 140°F (60°C)/ 60 minutes

#### Other helpful hints for successful pasteurization:

\*Time pasteurization so that it happens as quickly as possible after harvest of the milk or colostrum. If pasteurization is not going to be started for more than a couple of hours, it will be important to first cool the milk or colostrum so that spoilage and pathogenic bacteria do not multiply in the product.

#### \*Will I need to add anything to the milk after it has been pasteurized?

Not Usually. There are certain vitamins that are heat sensitive and may be decreased in concentration due to the pasteurization process but to our knowledge, no cases of deficiency or hypovitaminosis have been attributed to proper pasteurization. There may be circumstances due to regional or farm-specific conditions that would dictate supplementation of vitamins, minerals or even added fat/protein. Always check with your local veterinarian if there are such suspicions and treat according to their instructions.

#### \*What if the milk becomes spoiled before I pasteurize it?

This condition is fairly common and can happen at times even when the same successful routines have been followed. There are spoilage bacteria in milk and colostrum that release acid as their by-products. This is usually lactic acid but there are also others. The release of acid from these proliferating bacteria then drives down the pH of the milk making it more acidic. Once the product is pasteurized it is safe for the calves to drink, but this can lead to rancid odors and flavors that might decrease consumption by the calves. Digestibility might also be different which can lead to scours. In cases of severe drop in pH, the milk will separate completely with a very thick layer of "cheese" on top or thick like pudding throughout the product. This is not due to overheating, it is due to the fact that protein denaturation and separation is made worse by the added heat of the pasteurization process. Heat combined with spoiled milk of low pH is a bad recipe which is why we recommend that you always try to pasteurize as soon as possible after harvest.

#### \* What is the optimal routine for handling milk?

We recommend that milk and colostrum be pasteurized immediately after harvest and then either fed at once or cleanly transferred to a refrigerated holding vessel. The milk can then be reheated to body temperature prior to feeding.

#### \*Are there ways to preserve the milk or colostrum if refrigeration is not an option?

Yes. Potassium sorbate and other preservatives can be added to milk or colostrum that is already pasteurized and this will help to prevent the growth of any remaining bacteria in the product. It is important to note that K-sorbate will not kill existing bacteria but will prevent any new growth. Do not add it prior to pasteurization as it will cause a lower pH and the symptoms described above including thickened or separated product and bad flavors.

#### \*Do I need to add milk extenders when using waste milk on the dairy?

This will depend on the fluctuations in the milk supply. It is best to test the total solids of the waste milk to see what the average looks like over a one week period. If total milk solids

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are too low you may want to discuss with your veterinarian whether to add an additional feeding or add more solids in the form of powder to your waste milk. Our recommendation is 3 feedings per day of quality pasteurized whole milk.

**\*Will I harm immunoglobulins if I pasteurize colostrum?**

NO. When done properly colostrum can be successfully pasteurized to eliminate the same pathogens that can be found in the milk. They are even more dangerous in colostrum since these bacteria and viruses can easily pass through the gut wall along with the large proteins that impart immunity to the calf. Colostrum can be safely pasteurized at 140F for 60 minutes to remove all pathogens without significant damage to immunoglobulins. Colostrum pasteurization should be as much a part of herd biosecurity as milk pasteurization.

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### Trouble Shooting

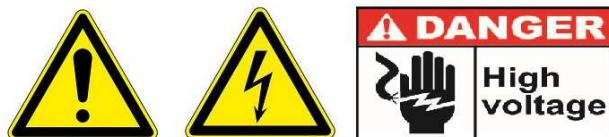
#### DT Platinum Pasteurizers

\*This guide is intended for use as a troubleshooting directive. All electrical tests and diagnostics should be performed only by those skilled in the electrical profession\*

\*All electrical testing and repairs should be performed by an experienced professional or technician trained in the electrical trade\*

\*Serious injury or death may result from improperly testing or handling this equipment\*

\*This unit contains HIGH VOLTAGE electricity that can cause serious harm or death\*



Some spare parts are included with your purchase and are marked as such in a separate box. All parts can be ordered at our website

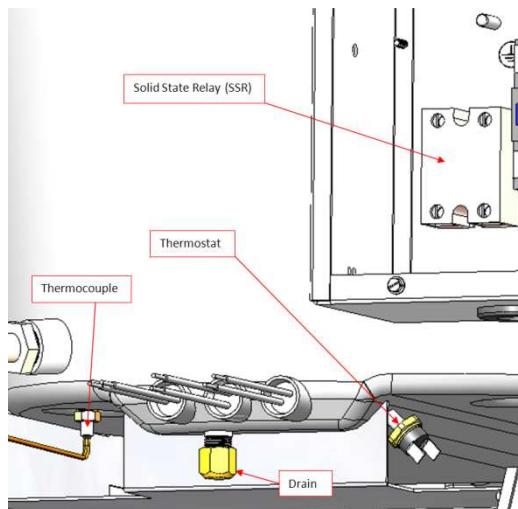
[www.dairytechinc.com](http://www.dairytechinc.com)

1. No power to the control panel
    - a. Check to be certain unit is plugged into 240vac outlet and that there is power at the outlet.
    - b. Be certain that breakers in panel box are not tripped
      - i. If the breakers are being tripped, the system is likely being shorted to ground. Look for any blown fuses to indicate trouble areas and consult the fuse layout for more detail. Have the system checked by a certified electrician before operating.
  - c. Check the 1amp fuse (F1). Make sure there is 115vac to and through the fuse. If not, replace with appropriate fuse. DO NOT REPLACE WITH OVERSIZED FUSES.
  - d. Check the rocker switch to see if it is lit when switched on. This should indicate that power is getting to the switch. Check for 115vac power between white and black wires at the switch terminals for constant power. Red and White should carry 115vac once the switch is flipped. If there is not 115vac leaving the switch through the red wire when switched on, the switch may need replacing.
  - e. Make certain that the power connections between the controller and the controller have not become loose. These are the black and white wires at terminals 13 and 14 from the control to the High Terminal Block.
  - f. The control itself could be malfunctioning or internally damaged. This is only rarely seen. Call for assistance.
2. Milk does not heat and the heater is not hot.
    - a. Heat components: Control calls for heat by signaling the SS Relay. The signal passes through the thermostat at the bottom of the tank and returns to the SS Relay which is then switched and activates the contactor. When the contactor is pulled in it permits current to the heating elements which then heat the milk or colostrum.

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- b. Is there power getting to the contactor? Check voltage to the top of the contactor for 1L1 to ground 120vac, 5L3 to ground 120vac. 3L2 is neutral in 240vac dual phase systems such as the US. (For Euro 240vac single phase find 240vac between line and neutral occupying 1L1 and 5L3.) If no power, check the breaker but power will also be off to the unit.
- c. Is the DC signal from the control arriving at the thermostat, and then passing on to the SS Relay? If signal comes to the thermostat but is not passed to the SSR during cool conditions, replace the thermostat. See diagram.



- d. Is there power getting to the heater? Initiate a cycle and the contactor should make a loud “click” as it activates. Check to see if the 220-240vac is getting through the contactor and out of 2T1 and 6T3 on the bottom. If not, the contactor may need replacing.

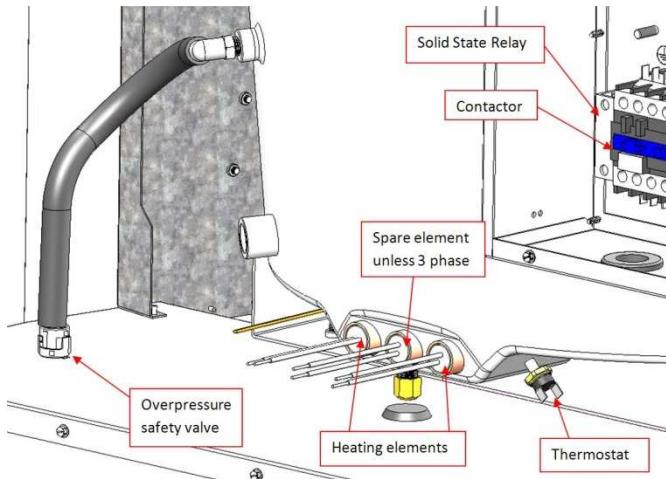
- i. If the contactor does not click, check the 115vac leads at the A1 and A2 tabs (black and white 16awg wires) on the back top of the contactor to see if it is being signaled by the SS relay. If there is 115vac signal, but no activation of the contactor, replace the contactor.
- ii. If no 115vac signal to the contactor, check the Solid State Relay K1. There should be a DC signal though the yellow and orange colored wires to the relay and the LED on the relay should be lit when activated. 115vac is supplied to the relay through the black wire at position 1. Once signaled, there should be 115vac out of the black wire position 2 to the contactor. If not, replace the SS Relay K1
- iii. No DC signal to the SS Relay K1 through yellow and orange wires. Check to make sure the control is lighting up the small red LED for output 1 on the display when operating a normal heat cycle. If output 1 is lit but no DC signal is found at terminal 12 and 21 from the control, then the control may be damaged.

- 3. 240VAC is getting to the heating elements but still no heat .... Check for continuity through the heating elements. If no continuity, replace the heating element with the included spare or order a replacement from Dairy Tech.

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**HEATING ELEMENTS:** The heater elements are replaced when necessary by removing the back panel after disconnecting all power to the unit. Electrical connections to the elements are disconnected from the contactor. Remove the cotter pin or anti-vibration compound that keeps the element in the tube and pull the element out of the SS sheath enclosure in the water tank. New elements should be handled minimally to avoid rubbing off the white powder coating. Simply press in as far as possible and replace the friction pin if there is one present. Reconnect the wires at the same locations on the contactor.

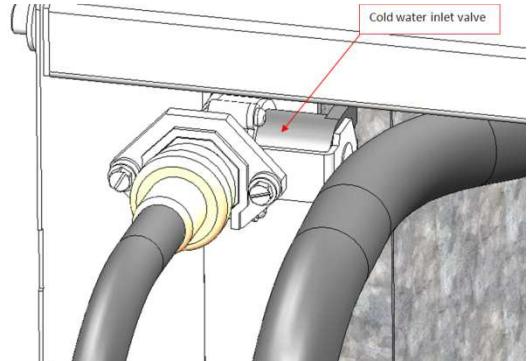
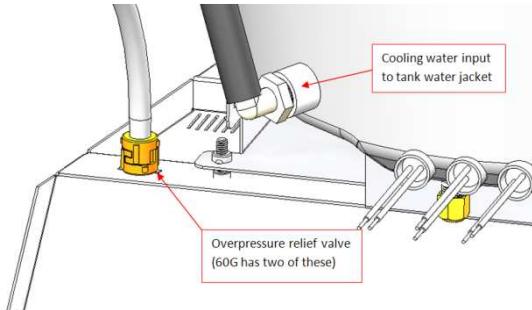


4. Milk does not get to temperature but the Heater is hot.
  - a. There are two active heating elements (the third one in the center is a spare unless it is a 3 phase application in Europe then all 3 are used) and it is possible that only one is operable. Check resistance on each element with the power off to determine if one needs replacing.
  - b. Make certain that the agitator motor is turning during the cycle. It should be on during heating, timing, and

- cooling cycles. Replace if it is not working.
- c. Check the bottom of the milk tank to make certain that it is being cleaned properly after each use. If there is milk build up or significant sticking, the unit is not being cleaned properly and heat transfer will be decreased, but more importantly, this is a prime opportunity for pathogens to grow.
  - d. Milk level is not high enough. The thermocouple needs to be fully covered in milk as it measures milk temperature at the tip. Also, too little milk will not allow optimal stirring which will decrease heat transfer and give false temperature readings.
  - e. Cold water is coming into the system. If there is a leak in the system, such as a leaking cold water solenoid valve, the heater cannot keep up and the milk will not heat properly. Repair the leak or replace the valve.
5. Water is leaking out the bottom of the Unit
    - a. Look under the machine on the sloping back floor, right side as you face the machine from the front. There is a pressure relief valve located here that will purge water if the drain line becomes occluded or pressures to the tank are too high. Check that the line is not blocked or kinked. See diagram below

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### 6. Milk will not cool

- a. At the end of the heating and time-out cycle, the cooling solenoid valve should automatically open and allow water to drain from the machine.
  - i. Make certain the discharge drain is not blocked, kinked or obstructed with back pressure of any kind
  - ii. Make certain the cold water supply to the unit is always on ... it is common to find that someone has shut the valve not knowing its importance.
  - iii. Make certain that the user did not initiate a "Heat Only" cycle after which the unit does not cool the milk automatically. Use the "Full pasteurization cycles" to make sure it goes through all steps.
- b. Check the cooling solenoid valve. The thermocouple temperature must be above 100F or above your cool setting in the control for the cycle to initiate.

- i. During cooling with the #2 LED on the control lit up, Is there power to the solenoid valve? If the power is on and the machine has water but it will not flow, replace the valve.
- ii. No power to the valve: Check the Circulation fuse (F1). Replace if necessary and check for power to the fuse from the control through terminal 22 blue wire. IF there is no 15vac power from the control at terminal 22 but the #2 LED is lit then the control may be damaged.
- c. Check the water supply to make sure screens and filters are free from debris and kinks in the hoses.

### 7. Data Transfer Failure Message

- a. IF the instrument cannot successfully write to the USB data stick, this message will appear when trying to download data points.
- b. Check that there is adequate disc space on the memory stick.
- c. This may also mean that the maximum number of profiles in the control has been exceeded.

### 8. Error Messages

- a. "Option Slot n Error" ... indicates a problem within the "n" module of

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- the control itself and must be returned for servicing or replaced
- b. “OPEN” error indicates that there is a failed sensor (thermocouple wire), broken connection, or an internal input circuit has failed. Check the thermocouple wire and the connections into the back of the control at terminals #2(purple +) and #3(red -). Replace thermocouple.
  - c. “ERROR” ... a fault has caused the equipment calibration to become corrupted. Call for recalibration options or return/replace the control.
  - d. “HIGH” or “LOW” ... the process value or temperature of the product is beyond the limits set for the control to operate in. Be sure to operate in a room without severe conditions. Replace the control if error persists in normal conditions.
9. Temperature Display is erratic or incorrect.
- a. Troubleshooting the thermocouple system
  - b. The thermocouples are polar sensitive and will yield erratic numbers or even move down in temp when the process is heating if they are wired in reverse. The unit may also flash an unusually high number and then immediately indicate that the cycle has ended. Make certain that purple or white leads are positive (+) and red leads are negative (-) at all junctions.
10. Milk is separated or congealed
- a. The most common cause for milk or colostrum to separate or congeal is acidification of the milk caused by two processes:
- i. Fermentation of the milk by bacteria will cause the release of lactic acid and other acidic by-products resulting in a lower pH of the milk. This in turn allows it to separate. The heat of pasteurization will exacerbate this problem. To control this, cool the milk during holding stages or pasteurize the milk sooner after collection to prevent the start of fermentation.
  - ii. Acidic cleaners are not being rinsed from the system. Rinse properly before each use. Do not use acids to clean the aluminum parts as this can cause severe damage to the tanks and pose a safety risk for the employees.
- b. Thickened milk or colostrum that is stuck to the tank may be due to:
- i. Improper stirring (make certain the propeller is moving during heating, time out and cooling cycles)
  - ii. Temperatures that are too high (rarely a problem since our units cannot superheat water).
11. Stir motor is not turning
- a. Check the fuse for the motor F2
  - b. If the fuse is good, make certain that the wire to the motor has not been damaged or pulled out of the terminal block high.
  - c. If there is power to the motor and it will not turn, replace the motor.
  - d. If there is no power to the motor and the fuse is good, check the control. There should be 115vac from terminal 24 to a neutral wire during heating or cooling. During heating,

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timing or cooling cycles, the red LED #2 should be on indicating power from the controller. If this light is not on, the control may be malfunctioning, replace the control.

12. Delay start does not come on automatically
  - a. Call for instructions to make certain the clock is set for the correct time of day.
  - b. Make certain that the steps for using the delay start are being followed exactly. There must be a specific program sent to you for installation on the control if you wish for something other than those preset with your purchase.
  - c. The control output could be damaged.
13. Cycle starts automatically when toggle is switched on
  - a. Your pasteurizer is equipped with a security feature that reminds it to come back on to its last unfinished cycle once power is restored after a power failure. This will also occur if someone shuts the unit off prior to completion of its assigned cycles, and the unit will automatically restart when the toggle switch or power is restored. If a long time period has elapsed, the control will reset itself, if not it will restart and must be reset by using the ABORT

PROFILE command as listed on the control.

14. Cooling solenoid valve will not stop running
  - a. Check the power supply to the valve. IF there is power keeping it open during unwanted times, the control could be malfunctioning, especially if the cold output LED #3 is on at the wrong times. Replace Control.
  - b. It is possible that some debris has held the solenoid open. Disconnect power and remove tubing from valve inside cabinet. Blow into the supply hose to eject any debris from the valve or force water backward through the valve. The valve may need to be replaced if it is powering properly but not closing when the solenoid closes.

For parts list and ordering visit  
[www.dairytechinc.com](http://www.dairytechinc.com)

You may also see the last pages of this user manual.

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### **Set-Up Menu for ProVu control**

These are the parameters to be set for the Dairy Tech controls.

#### **SETUP WIZARD**

Enter the menu by first powering the unit and wait for the self check to be completed.

While holding the RETURN button, press the UP arrow to enter the main menu.

Scroll to select the SETUP WIZARD using the UP and DOWN buttons.

Enter the security password which is 10.

Thermocouple:

Type E

Engineering Units:

F or C depending on country \*\*\*hint\*\*\* if you select C, the profiles must individually be changed to Celsius as well. This is not automatic for the profiles\*\*\*

123.4

Decimal Point Position:

0 (make sure it is 0 when in Celsius)

Scale Input Range Lo Limit:

300 (make sure it is set to 100 in Celsius)

Scale Input Range Upper Limit:

Single

Control Type:

Reverse

Primary Control Action:

Automatic

Select Automatic or Manual Control:

Primary Power

Output 1:

Event & Alarm

Output 2A:

Event 1, Direct Acting

OP2A Usage:

Event & Alarm

Output 2B:

Event 2, Direct Acting

OP2B Usage:

Event & Alarm

Output 3:

Event 3, Direct Acting

OP3 Usage:

Local Setpoint 1 Only

Setpoint Selection:

7.0 F

Local Setpoint 1 Value:

mm/dd/yyyy

Alarm 1: Unused

Alarm 2: Unused

Alarm 3: Unused

Alarm 4: Unused

Alarm 5: Unused

Date Type:

Date enter

Day enter

Time enter

Run Pre-Tune: NO

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### ***Instructions for Adding a New Profile***

A new profile may be desired for special circumstances on a dairy that call for variations in temperature, time of cycles, time of day to start a cycle automatically, or complex profiles that allow multiple functions.

New Profiles must be written according to the controller code and is normally done by Dairy Tech trained personnel and the new profile is sent to the dairy or dealer via email. This file can then be loaded onto a memory stick and inserted into the UBS port on the front of the control.

### ***Instructions for downloading a new profile to your Dairy Tech Pasteurizer from a USB memory stick***

Step 1. You must start with a memory stick that has been initialized by the West control on your Dairy Tech pasteurizer. To do this, simply turn on the pasteurizer so that the control lights up. Insert your memory stick into the front of the machine by gently prying off the rubber protective cap that covers the USB port on the front lower right of the control.

Insert the memory stick and the control will display the message “initializing memory stick ... do not remove”. The unlock code is 10. When it is finished it will ask you to press the return button. Now the controller has configured your memory stick with the appropriate files so that it can handle data that is usable by the control. Remove the memory stick , hold the enter button and press the up arrow twice to return to the main screen then power down the control.

Step 2. Insert your memory stick into your computer so that you can open the email with your custom file on it and save to the memory stick. You may have to go into the USB drive for the memory stick and make certain that the new profile file is saved into the correct place. When you initialized the memory stick it created a large file called DEVICE. Inside this are 3 subfiles: RECORDER, CONFIG and PROFILE. You will want to make sure that you save your new custom profile into the PROFILE folder.

Step 3. Now you can insert the memory stick into a West control on a Dairy Tech pasteurizer. It will once again initialize. The unlock code is 10.

Scroll down to READ PROFILE FILE ... press ENTER

Select the new file from the list or it may be the only one ... press ENTER

It will ask CONFIRM READ? Scroll to YES and press ENTER

Wait while the control reads the file and shows TRANSFER SUCCESSFUL... press ENTER

Remove the memory stick and replace the rubber cap over the USB slot.

Hold the ENTER button while pressing the UP arrow twice to return to the front screens

Step 4. Use the pasteurizer normally and choose the new profile from the list of options when running a profile.

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### **Manually Adding a New Profile**

This is possible to do using only the keys on the control itself but this requires multiple steps that be done correctly. Do not try this unless you are a distributor with training from Dairy Tech personnel.

### ***Control Configuration***

In this menu, we set the configurations for the control which help determine the PID temperature control process. This information is provided as a reference but should never be required unless you have contacted Dairy Tech service technicians about a problem and they ask you to reference these parameters for troubleshooting purposes. Do not adjust any of these parameters as this will change the function of the machine and void your warranty on the controller.

From the operational mode when the machine is first turned on hold the RETURN button and press the UP ARROW one time. Then use the DOWN ARROW to scroll to ‘configuration menu’. Press the RETURN button and enter the unlock code which is 10 by scrolling with the UP ARROW, the RETURN.

Scroll down and choose ‘control configuration’ from the menu and press RETURN.

You are now in the menu and can move back and forth using the RETURN or BACK ARROW keys, and the UP and DOWN keys to make adjustments. Here are the settings

Control enable/disable	control enabled
Select auto/manual control	automatic control only
Control type	single
Primary control action	Reverse
Control status	(Do nothing ... it will show ambient and setpt)
Primary Power	0.0%
Primary Proportional Band	0.5%
Integral Time	15:00
Derivative Time	3:55
Manual Reset Bias	25%
Primary Cycle Time	20.0 sec
Primary Power lower limit	0.0%
Primary Power Upper Limit	100.0%
Sensor Break	OFF
Setpoint Selection Method	Local Setpt 1 Only

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Setpoint Lower Limit	0 F (also 0 when in Celsius)
Setpoint Upper Limit	300 F (set at 100 when in Celsius)
Ramp in Operator Mode	NO
Setpoint Ramp Rate	OFF
Local Setpoint 1 Value	7

### ***HOW TO CHANGE FROM FAHRENHEIT TO CELCIUS***

From the operational mode when the machine is first turned on hold the RETURN button and press the UP ARROW one time. This will take you to the Main Menu. Then use the DOWN ARROW to scroll to SETUP WIZARD and follow the instructions listed above to change the engineering units from F° to C°

WARNING: switching from F° to C° should automatically adjust profiles from F° to C°

A video guide for this procedure is also available at [www.dairytechinc.com](http://www.dairytechinc.com)

### ***IF TEMPERATURE NEEDS TO BE CALIBRATED***

If you find that one or more secondary thermometers disagree with the control display, you can adjust the temperature settings in the control to make up for the difference.

From the operational mode when the machine is first turned on hold the RETURN button and press the UP ARROW one time. Then use the DOWN ARROW to scroll to ‘configuration menu’. Press the RETURN button and enter the unlock code which is 10 by scrolling with the UP ARROW, the RETURN.

Scroll down and choose ‘Input configuration’ from the menu and press RETURN.

You are now in the menu and can move back and forth using the RETURN or BACK ARROW keys, and the UP and DOWN keys to make adjustments. Here are the settings:

Input Type	E thermocouple
Engineering Units	F (C if that is your preference)
Decimal Point Position	123.4
Scale Input Range Lower	0 F (when in Celsius, check to make sure this is 0 also)
Scale Input Range Upper	300 F (when in Celsius, check to make sure this is 100)
Cold Junction Compensation	Enabled
Process Variable Offset	OFF (this is the value you would decrease or increase to adjust a calibration issue with the temperature ... OFF is Zero)
Input Filter Time	2.0 s
Calibration Reminder	Disabled

# Dairy Tech, Inc.

## *Service Manual: DT10G, DT30G &DT60G*

TO EXIT THE MENU, HOLD THE RETURN KEY AND PRESS UP ARROW REPEATEDLY UNTIL BACK TO THE OPERATIONAL SCREENS.

### ***To change a Profile***

From the operational mode when the machine is first turned on hold the RETURN button and press the UP ARROW one time to main menu. Then use the DOWN ARROW to scroll to ‘profile setup’. Press the RETURN button and enter the unlock code which is 10 by scrolling with the UP ARROW, the RETURN.

Scroll down to Edit a Profile Segment, then RETURN, then select the profile to edit and press RETURN again. Now you will see the list of segments that make up the profile. For a ‘colostrum normal’ profile it will look like this:

1. Step
2. Ramp Rate
3. Dwell
4. Ramp Time
5. End

Select a segment by highlighting it then RETURN. Here is a list of how the settings should appear in each of those segments (Other profiles will have different segments and different settings depending on their purpose) This example shows the settings for **COLOSTRUM NORMAL**

#### 1. Step:

Segment type step  
Target setpoint 139.0 F

( then press RETURN to complete the segment update even if you did not change anything ... repeat the process for all segments)

#### 2. Ramp Rate:

Segment type ramp rate  
Target setpoint 139.5 F (this value would be 59.7 C)

Segment ramp rate 60.000 F  
Auto Hold Type Below Setpoint

Auto Hold Band Val 1.0 F

Event 1 Active

Event 2 Inactive

Event 3 Active

Event 4 Inactive

Event 5 Inactive

(press RETURN to complete)

# Dairy Tech, Inc.

## *Service Manual: DT10G, DT30G &DT60G*

### 3. Dwell:

Segment type Dwell  
Dwell at 139.5 for 01:00:00  
Auto hold type Below setpoint  
Auto hold band value 0.5 F  
Event 1 Active  
Event 2 Inactive  
Event 3 Active  
Event 4 Inactive  
Event 5 Inactive  
(press RETURN to complete)

### 4. Ramp Time

Segment type ramp time  
Target setpoint 90.0 F this is the cool point  
Segment ramp time 00:00:02  
Auto hold type above setpoint  
Auto hold band value 2.0 F  
Event 1 Active  
Event 2 Active  
Event 3 Inactive  
Event 4 Inactive  
Event 5 Inactive  
(press RETURN to complete)

### 5. END

Segment type End  
Segment end type Control Off  
Event 1 Inactive  
Event 2 Inactive  
Event 3 Inactive  
Event 4 Inactive  
Event 5 Inactive  
(press RETURN to complete)

# Dairy Tech, Inc.

## *Service Manual: DT10G, DT30G &DT60G*

BH-Bag-Guard for DT10G models

### **Accessing controller function**

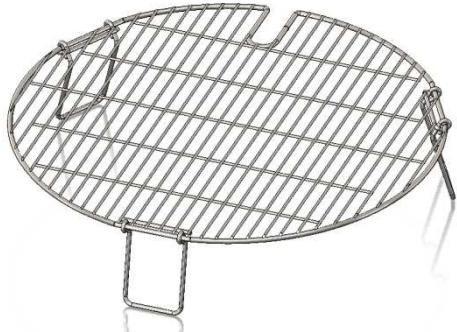
#### **\*\*\* IMPORTANT WARNING\*\*\***

**DO NOT ALTER SETTINGS IN THE  
CONTROLLER WITHOUT CONSULTING A  
DAIRY TECH REPRESENTATIVE .... ANY  
UNAUTHORIZED ADJUSTMENTS WILL  
VOID THE PRODUCT WARRANTY AND  
MAY LEAD TO SERIOUS HEALTH  
CONSEQUENCES FOR THE CALVES.**

To access the controller main menu for milk/heater temperature settings as well as process timing, follow these steps:

### **Accessories:**

Bag Guard ... allows use of the Perfect Udder® bags for pasteurizing small volumes of colostrum  
AH-bag-guard for DT30G models



### **Perfect Udder® Colostrum Management Kits**

Permit storage, freezing, pasteurization, reheating and feeding directly from the bag  
Avoid the pitfalls of bottles and ensure calf health with disposable colostrum feeding.



### **Contact Dairy Tech, Inc.**

**Dairy Tech, Inc.  
352 N. Shores Circle  
Windsor, CO 80550**

**Phone:  
1-866-384-2697  
1-970-674-1888  
1-970-686-5871 fax  
Monday – Friday  
7:00 a.m. – 6:00 p.m., MST**

**Web:  
[www.dairytechinc.com](http://www.dairytechinc.com)**

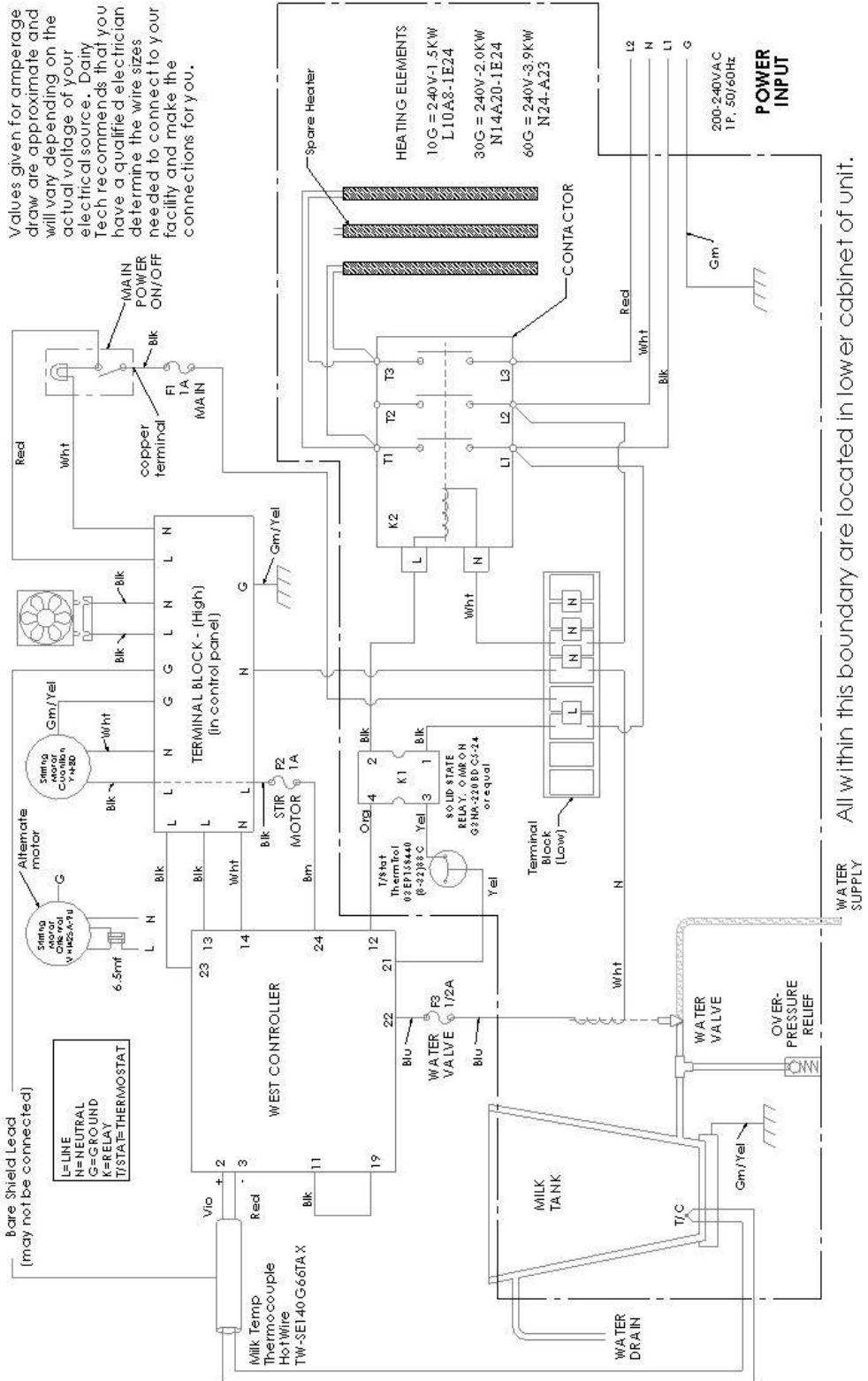
**DAIRY TECH PASTEURIZER - ELECTRICAL SCHEMATIC - DOMESTIC**

FD2366D  
7/30/2012

D. D. *Journal of Clinical Endocrinology* 1998, 140, 106–112. © 1998 Blackwell Science Ltd

**WARNING** - SERVICE OF THIS ASTEUTER MUST BE PERFORMED BY QUALIFIED PERSONNEL ONLY. LETHAL VOLTAGES ARE PRESENT WHEN UNIT IS CONNECTED TO POWER SOURCE. DISCONNECT POWER PRIOR TO AND DURING SERVICE TO ENSURE THE SAFETY OF YOU AND THOSE AROUND YOU. HOT SURFACES MAY BE EXISTEVEN IF THE POWER SOURCE IS DISCONNECTED.

Values given for amperage draw are approximate and will vary depending on the actual voltage of your electrical source. Dairy Tech recommends that you have a qualified electrician determine the wire sizes needed to connect to your facility and make the connections for you.



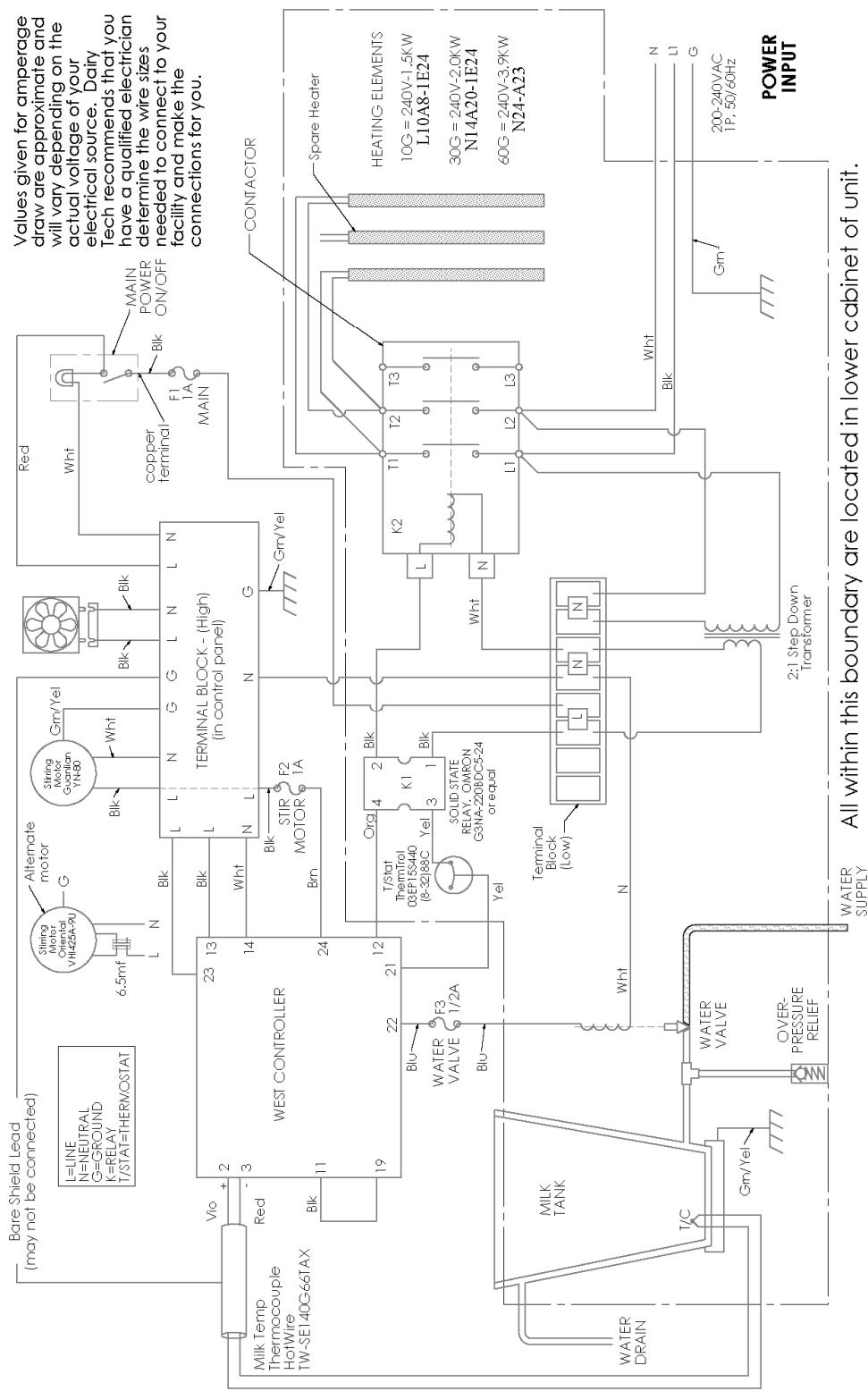
All with this boundary are located in lower cabbagetown.

DAIRY TECH PASTEURIZER - ELECTRICAL SCHEMATIC - ENGLAND & JAPAN

H02368B  
3/26/2012

<b>MODEL 10G</b>	-	200-240VAC,	1P,	50/60Hz	(15 Amp)
<b>MODEL 30G</b>	-	200-240VAC,	1P,	50/60Hz	(18 Amp)
<b>MODEL 60G</b>	-	200-240VAC,	1P,	50/60Hz	(35 Amp)

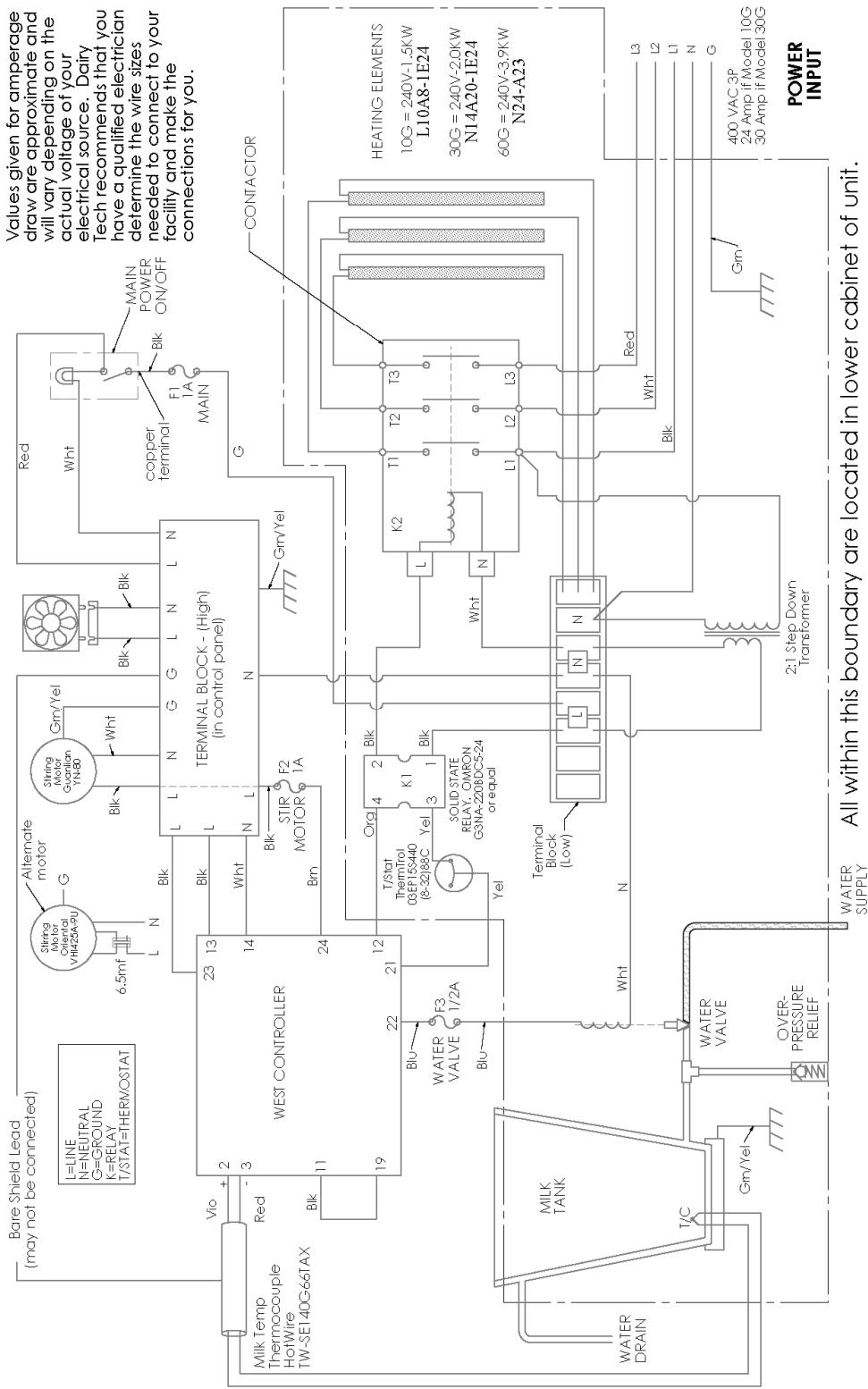
**WARNING** - SERVICE OF THIS PASTERIZER MUST BE PERFORMED BY QUALIFIED PERSONNEL ONLY. LETHAL VOLTAGES ARE PRESENT WHEN UNIT IS CONNECTED TO POWER SOURCE. DISCONNECT POWER PRIOR TO, AND DURING SERVICE TO ENSURE THE SAFETY OF YOU AND THOSE AROUND YOU. HOT SURFACES MAY BE EXIST EVEN IF THE POWER SOURCE IS DISCONNECTED. FAILURE TO ABIDE BY THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH.



*Schematic for Model DT10, 30, 60G – 200 to 240VAC, 1P, 50/60Hz, England & Japan*

**DAIRY TECH PASTEURIZER - ELECTRICAL SCHEMATIC - EUROPE**  
**MODEL 10G - 400VAC 3P, DT10G (12Amp)**  
**MODEL 30G - 400VAC 3P, DT30G (16Amp)**  
**MODEL 60G - 400VAC 3P, DT60G (32Amp)**

**WARNING** - SERVICE OF THIS PASTERIZER MUST BE PERFORMED BY QUALIFIED PERSONNEL ONLY. LETHAL VOLTAGES ARE PRESENT WHEN UNIT IS CONNECTED TO POWER SOURCE. DISCONNECT POWER PRIOR TO, AND DURING SERVICE TO ENSURE THE SAFETY OF YOU AND THOSE AROUND YOU. HOT SURFACES MAY BE EXIST EVEN IF THE POWER SOURCE IS DISCONNECTED. FAILURE TO ABIDE BY THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH.



*Schematic for Model DT10, 30, 60G – 400VAC, 3P, Europe*

***NOTES:***

## **10G Replacement Parts**

AE-Relay8	Omron LY1-AC110/120
AE-RelayBase	DIN Relay Socket
AE-TC-Dual-K	type K thermocouple dual leads for data logging .25" x 2.5" w 66 teflon lead
AE-Transform	Transformer, 110 to 24VAC
AP-ValBall	3/4"NPT ball valve
AP-ValReduce	1/2 PNT water press reducing valve 15psi
BE-Element1500	1500 W 5/8" cartridge heater, 240vac with 24" leads
BE-TC2-G	Thermocouple SS 2" type E with shield wire 66" leads
BH-LidSS	SS custom lid Dairy Tech without handle
BH-Prop-F02015C	SS propeller 4"
BM-10GalSS-F01985B	10 gal polished SS milk tank assembly
BM-Shaft-F02014B	Shaft SS w Knurled grip thread
BP-ValETDZ	solenoid valve 3L/min
BP-ValGasket	1" sanitary valve gasket
DE-Control	Programable Minichef processor/controller
ME-Contact	Contactor 25amp DP 120vac
ME-ControlWest	Digital control with graphing
ME-CordDryer	220vac 30amp dryer cord
ME-CordGrip1	1" power cord grip
ME-Fan	3.125" axial fan 115VAC 34CFM 12" leads
ME-FanFilter	Fan Filter, Washable, Aluminum
ME-FuseHold	fuse holder 16a 1/4 x 1/4
ME-MotorGear120	replacement motor with connector plug
ME-RelaySS	SSRelay, DC-AC, 20A
ME-Rocker	120vac illuminated red rocker switch
ME-ThermDisc	disc thermostat #03EP15S4400 (8-32) 88C 165-190F 8-32 thread
ME-Transform-EU	Euro stepdown transform 220vac
MH-Brush34	3/4" test tube brush with 9" handle
MH-Manual	Platinum series owners manual
MP-Gasket1	1" sanitary gasket for SS tube
MP-Hose-Wash	6' Washer hose with FHT ends
MP-Spigot	custom flanged spigot 1" SS
MP-ValRelief	purge valve 4 psi
MP-ValveClamp1"	1" SS valve clamp
MP-ValveSS1"	304SS 1.25" sanitary butterfly valve
BH-BagGuard	SS 10G guard SS wire mesh
MP-ValveAppliance120v	appliance rated solenoid valve 115vac NC
MP-ValAppliance230v	230vac appliance solenoid valve, GHT male, for model 10G, 30G and 60G
ME-MotorGear240	240vac gear motor direct drive
ME-MotorChainAssy240v	240vac chain drive motor assy

## **30G Replacement Parts**

AE-Elem2KW	1" NPT 240 vac 2kW element
AE-Elem2KWFireRod	2kW 3/4" x 14" cartridge heat SS with 24" leads
AE-Relay8	Omron LY1-AC110/120
AE-RelayBase	DIN Relay Socket
AE-TC-Dual-K	type K thermocouple dual leads for data logging .25" x 2.5" w 66 teflon lea
AE-Therm2.5	Thermocouple, , type E 2.5" t/c 1/4" diameter with 66" leads
AE-Transform	Transformer, 110 to 24VAC
AH-DecalDT30W	Front decal for controller
AH-ShaftDT30W	DT30 SS 1/2" shaft
AH-TankSeal	triangle with hook white nitrile custom seal 6'
AP-ValBall	3/4"NPT ball valve
AP-ValReduce	1/2 PNT water press reducing valve 15psi
AP-WaterTank5	5qt tank S01212A tank assbly
AP-WtankValve	liquid sensor for water
DE-Control	Programmable Minichef processor/controller
ME-Contact	Contactor 25amp DP 120vac
ME-ControlWest	Digital control with graphing
ME-CordDryer	220vac 30amp dryer cord
ME-CordGrip1	1" power cord grip
ME-Fan	3.125" axial fan 115VAC 34CFM 12" leads
ME-FanFilter	Fan Filter, Washable, Aluminum
ME-FuseHold	fuse holder 16a 1/4 x 1/4
ME-MotorGear120	replacement motor with connector plug
ME-RelaySS	SSRelay, DC-AC, 20A
ME-Rocker	120vac illuminated red rocker switch
ME-ThermDisc	disc thermostat #03EP15S4400 (8-32) 88C 165-190F 8-32 thread
ME-Transform-EU	Euro stepdown transform 220vac
MH-Brush34	3/4" test tube brush with 9" handle
MH-Manual	Platinum series owners manual
MP-Gasket1	1" sanitary gasket for SS tube
MP-Hose-Wash	6' Washer hose with FHT ends
MP-Spigot	custom flanged spigot 1" SS
MP-ValRelief	purge valve 4 psi
MP-ValveClamp1"	1" SS valve clamp
MP-ValveSS1"	304SS 1.25" sanitary butterfly valve
AH-BagGuard	30gal prop guard SS wire mesh
MP-ValveAppliance120v	appliance rated solenoid valve 115vac NC
MP-ValAppliance230v	230vac appliance solenoid valve, GHT male, for model 10G, 30G and 60G
ME-MotorGear240	240vac gear motor direct drive
ME-MotorChainAssy240v	240vac chain drive motor assy

## **60G Replacement Parts**

AE-Therm2.5	Thermocouple, , type E 2.5" t/c 1/4" diameter with 66" leads
ME-ControlWest	Digital control with graphing
ME-CordGrip1	1" power cord grip
ME-Fan	3.125" axial fan 115VAC 34CFM 12" leads
ME-FanFilter	Fan Filter, Washable, Aluminum
ME-FuseHold	fuse holder 16a 1/4 x 1/4
ME-MotorGear120	replacement motor with connector plug
ME-RelaySS	SSRelay, DC-AC, 20A
ME-Rocker	120vac illuminated red rocker switch
ME-ThermDisc	disc thermostat #03EP15S4400 (8-32) 88C 165-190F 8-32 thread
ME-Transform-EU	Euro stepdown transform 220vac
MH-Brush34	3/4" test tube brush with 9" handle
MH-Manual	Platinum series owners manual
MP-Gasket1	1" sanitary gasket for SS tube
MP-Hose-Wash	6' Washer hose with FHT ends
MP-Spigot	custom flanged spigot 1" SS
MP-ValRelief	purge valve 4 psi
MP-ValveClamp1"	1" SS valve clamp
MP-ValveSS1"	304SS 1.25" sanitary butterfly valve
JE-element	24" cartridge heating element 3900watt 3/4" diam 240vac #N24A23
JE-cord50Amp	50amp 6' 4-wire appliance cord
JE-contact50Amp	50amp contactor 3pole 240vac
JH-BagGuard1316	SS wire mesh bag guard 60G
JM-2548A-stirshaft	60G SS stir shaft, threaded end with knurling
JM-2549A-Prop60G	60G SS propeller for mixing
JM-Plug-n-Strap	Black silicone set 1 plug and 3 straps for 60G lid
JM-60G-lid	white 2KG DT60G Lid HDPE w dairy tech logo
MP-ValveAppliance120v	appliance rated solenoid valve 115vac NC
MP-ValAppliance230v	230vac appliance solenoid valve, GHT male, for model 10G, 30G and 60G
ME-MotorGear240	240vac gear motor direct drive
ME-MotorChainAssy240v	240vac chain drive motor assy
ME-Switch230v	push button Red LED weather resistant switch 240vac
ME-Fan240v	240vac fan 80mmx80mm

